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Substitute Specification

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FOLDING PINNACLE BENDING DEVICE

CROSS-REFERENCE TO RELATED APPLICATION

[0001] This Nonprovisional application claims priority under 35 U.S.C. § 119(a) on Patent Application No(s). 103 21 493.2 filed in Germany on May 13, 2003, the entire contents of which are hereby incorporated by reference.

BACKGROUND OF THE INVENTION

1. Field of the Invention

[0002] The present invention relates to a folding pinnacle bending device for a mobile crane. Such folding pinnacles serve as jib extensions on mobile cranes. In order to obtain a greater overhang – for example, over the edges of buildings – for the same size of crane, it is necessary to bend the folding pinnacle. Such an application is shown in the enclosed Figure 1. In order to be able to operate over the upper edge of the high-rise building 30, the mobile crane 20 bears a folding pinnacle 10 which is fastened to its outermost section and can be bent by means of a bending device 9, such that an overhang over the edge of the building is made possible.

2. Description of Related Art

[0003] In the prior art, two different types of folding pinnacle bending devices are known. These are mechanically adjustable rods in the upper or tensile load area of the of the joint area on the one hand, and hydraulic cylinder bending devices in the lower or pressure area of the joint area on the other.

[0004] Figure 2 shows a bending device in accordance with the prior art, comprising a hydraulic cylinder 17 in the lower pressure load area of the joint area 9'. The hydraulic cylinder 17 is controlled by supplying and venting a hydraulic fluid and is thus altered in length. This has the advantage that the angle can be adjusted from the crane cabin in all positions of the main jib. Disadvantageously, however, high manufacturing costs are incurred, which are not always acceptable.

[0005] Figure 3 shows the “mechanical solution” in accordance with the prior art, in which mechanically adjustable rods 16 are provided in the joint area 9'', specifically in the upper tensile load area. The disadvantage of such a construction is that it cannot replace the hydraulic cylinder version (Figure 2) without major alterations.